AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application:

1. (Currently Amended) An optical module comprises an inlet side optical fiber, an optical filter optically connected to said inlet side optical fiber, and an outlet side optical fiber optically connected to said optical filter, wherein said optical fibers transmit an optical signal of a semiconductor laser being directly modulated with an analog electric signal; and

wherein, said optical filter comprises a gain-slope compensation optical filter for flattening a gain slope ($dG/d\lambda$, where G:gain, λ:wavelength), wherein the gain slope is calculated by first order differentiation as a function of a wavelength and is generated by the variation of input signals, of an optical amplifier connected to said inlet side optical fiber or said outlet side optical fiber wherein said flattening is achieved by making said gain slope substantially equal to zero over an amplification wavelength band of said optical amplifier.

2. (Original) The optical module as claimed in claim 1, wherein said gain-slope compensation optical filter comprises a dielectric multi-layer film filter.

3. (Original) The optical module as claimed in claim 1, wherein said gain-slope compensation optical filter comprises a long-period fiber grating.

4. (Canceled)

5. (Previously Presented) An optical amplifying module comprising:

the optical module according to claim 1; and

an optical amplifier optically connected to the optical module.

6. (Original) The optical amplifying module as claimed in claim 5, wherein said optical amplifier comprises a rare earth doped optical fiber amplifier.

7. (Previously Presented) The optical amplifying module as claimed in claim 5, wherein an inlet side optical amplifier, an outlet side optical amplifier, and one said optical module are included, and said optical module is arranged between said inlet side optical amplifier and said outlet side optical amplifier.

8. (Previously Presented) An optical transmission system comprising:
the optical module according to claim 1;
an optical amplifier; and
an optical branching means,
wherein FDM (Frequency Division Multiplexing) signals are branched and transmitted.

9. (Previously Presented) An optical transmission system comprising:
the optical module according to claim 1;
an optical amplifier; and
an optical branching means, wherein FDM (Frequency Division Multiplexing) signals are further Wavelength Division Multiplexed to be branched and transmitted.

10. (Previously Presented) The optical transmission system as claimed in claim 8, wherein said optical amplifier comprises a rare earth doped optical fiber amplifier.

11. (Currently Amended) A method for amplifying frequency modulated optical signals of a semiconductor laser, wherein the optical signals are directly modulated with an analog electric signal, comprising employing:
an optical amplifying means; and
a gain-slope compensation means for flattening a gain slope of optical amplifying gain before or after an optical amplifying, the gain-slope compensation means flattening the gain slope generated by the variation of an input signal, wherein the gain slope is generated by the variation of input signals and is calculated by first order differentiation as a function of a wavelength, wherein said flattening is achieved by making said gain slope substantially equal to zero over an amplification wavelength band of said optical amplifier.

12. (Previously Presented) The method as claimed in claim 11, further comprising using a dielectric multi-layer film filter as said gain-slope compensation means.